

REMARKS

Applicants respectfully object to the finality of the present Final Office Action.

Applicants consider the finality of the present Final Office Action to be procedurally improper and respectfully maintain that the present Office Action should instead be a non-final Office Action, because the present Office Action includes new grounds of rejection not caused by claim amendments in Applicants' prior Final Office Action response filed 04/07/2003. Applicants' representative and the Examiner discussed this issue by telephone on 06/09/2003; however, no agreement was reached and the issue remains unresolved. Accordingly, Applicants have filed a petition to the Commissioner for Patents under 35 CFR § 1.181(a)(1) to have the finality of the present Final Office Action reversed.

Currently pending claims 1-9 and 20-30 are for consideration by the Examiner.

The Examiner rejected claims 1-6, 9 and 20 under 35 U.S.C. §102(b) as allegedly being anticipated by Takubo et al. (US 6,329,610).

The Examiner rejected claim 7 under 35 U.S.C. §103(a) as allegedly being unpatentable over Takubo et al. (US 6,329,610) in view of Sasaoka (US 6,010,769).

The Examiner rejected claim 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over Takubo et al. (US 6,329,610) in view of Kawasaki (US 5,372,666).

The amendment herein of claims 1 and 20 is not being made for reasons of patentability, but only to further clarify the invention. Indeed, Applicants have presented arguments herein in defense of the validity of the claim 1 and 20 if the amendment herein of claims 1 and 20 is not entered.

Applicants respectfully traverse, with the following arguments, the rejections under

§102(b) and §103(a). Applicants will present alternative arguments, wherein first arguments assume that the amendment herein of claims 1 and 20 will not be entered, and wherein second arguments assume that the amendment herein of claims 1 and 20 will be entered.

35 U.S.C. §102 (Assuming Non-Entry of Amendments to Claims 1 and 20)

The Examiner rejected claims 1-6, 9 and 20 under 35 U.S.C. §102(b) as allegedly being anticipated by Takubo et al. (US 6,329,610). The Examiner alleges: "Regarding claim 1, Takubo (e.g. fig. 3) shows an electronic structure comprising: A substrate having a dielectric layer 22 between a first metal layer 14a and a second metal layer 13a; A contact area located in the first metal layer (the region in contact with the layer 33); A selected area located on the second metal layer (the area around the through hole); A microvia cavity located within the selected area and extending through the second metal layer and the dielectric layer; And a mass of single conductive material 33 forming a layer upon the selected area of the second metal layer and totally filling the microvia cavity and being in contact with the first contact area of the first metal layer." The Examiner made similar allegations in relation to claim 20.

Applicants respectfully contend that Takubo does not anticipate claims 1 and 20, because Takubo does not teach each and every feature of claims 1 and 20. For example, Takubo does not teach the following feature of claims 1 and 20: "a mass of a single conductive material forming a layer upon the selected area of the second metal layer" (emphasis added), because the conductive material is not a layer that satisfies the requirements of claims 1 and 20 (A layer is defined as "a thickness of some material laid on or spread over a surface" (emphasis added). The Random House College Dictionary 760 (revised ed. 1988). Thus to meet the requirements of the preceding definition, the layer must have a first surface and a second surface such that the thickness of the layer is the distance between the first surface and the second surface. Also, the first surface or second surface of the layer must be laid on or spread over a third surface of another object as required by the preceding definition of a layer. In application to Takubo, the

Examiner has identified the layer as being the conductive plug in via 33. The Examiner has also identified the third surface (on which the layer is laid on or spread over) as being the surface portion of the second metal layer 13a that surrounds the via 33. Accordingly, the first surface of the layer is the portion of the outer surface of the conductive plug that is in contact with (i.e., laid on or spread over) the third surface of the second metal layer 13a. However, the conductive plug has no thickness, because the conductive plug lacks a physical boundary from which a thickness could be ascertained, as measured from the first surface of the conductive plug. The top and bottom surfaces of the conductive plug cannot be used to define the thickness of the layer, because neither the top nor the bottom surface of the conductive plug is laid on or spread over the third surface of the second metal layer 13a. Therefore, the conductive plug is not a layer that satisfies the requirements of claims 1 and 20.

Based on the preceding arguments, Applicants respectfully maintain that Takubo does not anticipate claims 1 and 20, and that claims 1 and 20 are in condition for allowance. Since claims 2-9 depend from claim 1, Applicants respectfully contend that claims 2-9 are likewise in condition for allowance.

35 U.S.C. §102 (Assuming Entry of Amendments to Claims 1 and 20)

The Examiner rejected claims 1-6, 9 and 20 under 35 U.S.C. §102(b) as allegedly being anticipated by Takubo et al. (US 6,329,610). The Examiner alleges: "Regarding claim 1, Takubo (e.g. fig. 3) shows an electronic structure comprising: A substrate having a dielectric layer 22 between a first metal layer 14a and a second metal layer 13a; A contact area located in the first metal layer (the region in contact with the layer 33); A selected area located on the second metal layer (the area around the through hole); A microvia cavity located within the selected area and extending through the second metal layer and the dielectric layer; And a mass of single conductive material 33 forming a layer upon the selected area of the second metal layer and totally filling the microvia cavity and being in contact with the first contact area of the first metal layer." The Examiner made similar allegations in relation to claim 20.

Applicants respectfully contend that Takubo does not anticipate claims 1 and 20, because Takubo does not teach each and every feature of claims 1 and 20. For example, Takubo does not teach the following feature of claims 1 and 20: "a mass of a single conductive material forming a layer upon the selected area of the top surface of the second metal layer". Applicants maintain that in FIG. 3 of Takubo, a conductive paste fills via-hole 33 but no such conductive paste is formed as a layer on a top surface of the second metal layer 13a.

Based on the preceding arguments, Applicants respectfully maintain that Takubo does not anticipate claims 1 and 20, and that claims 1 and 20 are in condition for allowance. Since claims 2-9 depend from claim 1, Applicants respectfully contend that claims 2-9 are likewise in condition for allowance.

35 U.S.C. §103

The Examiner rejected claims 7-8 under 35 U.S.C. §103(a). Since claims 7-8 depend from claim 1, which Applicants have argued *supra* to be patentable under 35 U.S.C. §102, Applicants maintain that claims 7-8 are not unpatentable under 35 U.S.C. §103(a).

CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that claims 1-9 and 20-30 and the entire application meet the acceptance criteria for allowance, and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invite the Examiner to contact Applicants' representative at the telephone number listed below.

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Appendix A. Blowup of Portion of FIG. 2 of Takubo (U.S.P. 5,665,650)

FIG. A-1 below is a blowup of portion of FIG. 2 of Takubo (U.S.P. 5,665,650) showing space 100 within boundary 120.

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